

MOD-IV Parcel Flood Analysis

Date Create/Updated: 10/20/2023

Description: This dataset provides potential flood analysis for each tax parcel in New Jersey. The analysis was performed using the Parcels and MOD-IV Composite of NJ ([Link](#)) and intersecting it with 1-20ft of Total Water Levels (see the Total Water Levels Tool on [NJFloodmapper](#) for more information) and the FEMA Flood Zones for the 1% Flood Event, 0.5% Flood Event, Regulatory Floodway, and Areas of Undetermined Flood Hazard.

Data Sources:

- *Parcels and MOD-IV Composite of NJ (2022 data)*
 - Downloaded from NJGIN Open Data Portal
 - <https://njogis-newjersey.opendata.arcgis.com/documents/parcels-and-mod-iv-composite-of-nj-download/about>
 - Metadata
 - <https://rutgers.maps.arcgis.com/sharing/rest/content/items/406cf6860390467d9f328ed19daa359d/info/metadata/metadata.xml?format=default&output=html>
 - Associated Fields (see metadata for details):
 - All fields from dataset included
- *National Flood Hazard Layer Composite*
 - Available from Rutgers NJ ADAPT map service:
https://njmaps1.rad.rutgers.edu/arcgis/rest/services/CoastalFlooding/FIRM_2020/MapServer
 - Metadata
 - https://njmaps1.rad.rutgers.edu/arcgis/rest/services/CoastalFlooding/FIRM_2020/MapServer/info/metadata
 - Notes: This dataset comprises the National Flood Hazard Layer Effective Products for all areas available for New Jersey as of February 2020, and utilize Preliminary Products for those areas without Effective Maps. Original datasets available from the FEMA Flood Map Service Center: <https://msc.fema.gov/portal/advanceSearch#searchresultsanchor>
- *New Jersey Total Water Levels*
 - Available from Rutgers NJ ADAPT map services:
<https://njmaps1.rad.rutgers.edu/arcgis/rest/services/CoastalFlooding> (MHHW 00ft - MHHW 20ft)
 - Metadata:
https://njmaps1.rad.rutgers.edu/arcgis/rest/services/CoastalFlooding/MHHW_01ft/MapServer/info/metadata
 - https://njhazardapt.rutgers.edu/files/metadata/Total_Water_Level_metadata.pdf
 - Notes: This dataset represents coastal flooding from MHHW levels from 0 – 20ft to illustrate potential flooding from combined sea-level rise and coastal storm events. Original dataset developed by the New Jersey Department of Environmental Protection

Methodology: The creation of this dataset consisted of a multi-step process outlined below and was conducted by the Rutgers NJAES Office of Research Analytics.

1. To determine the Total Water Level (TWL) impact on each parcel in the Parcel and MOD-IV composite dataset, the 'Zonal Statistics' geoprocessing tool in ArcGIS Pro was used to calculate areal statistics for each TWL depth across the entire statewide parcel dataset. Statistics returned provided the percent area of each parcel that was inundated by the specific TWL and a binary flag variable was generated to indicate whether there was a flood impact at that TWL level.
2. To determine the FEMA Flood Hazard Layer impact on each parcel in the Parcel and MOD-IV composite dataset, 'Summarize Within' geoprocessing tool in ArcGIS Pro was used to calculate the area of each flood zone area within each parcel across the entire statewide parcel dataset. A binary flag variable was generated for each flood zone area to indicate whether there was a flood impact from that flood zone on the parcel.

Data Fields: The majority of the fields included in the data package come from the Parcels and MOD-IV Composite of NJ and more information on them can be found in the metadata linked in the Data Sources section. The new fields generated by the flood analysis that are appended to this data are provided below:

- **pct_cvr_[1-20]** – This set of fields provides the percent area of the parcel in decimal form that is inundated given a coastal flood inundation of the specified number of feet (from 1 to 20 feet in 1ft increments).
- **pct_cvr_acfh_pt2pct** – The percent area of the parcel in decimal form that is covered by 0.2% annual chance flood event (500 year flood event) from the FEMA National Flood Hazard Layer Composite
- **pct_cvr_acfh_1pct** – The percent area of the parcel in decimal form that is covered by the 1% annual chance flood event (100 year food event) from the FEMA National Flood Hazard Layer Composite.
- **pct_cvr_area_uhf** – The percent area of the parcel in decimal form that is covered by the areas of undetermined flood hazard from the FEMA National Flood Hazard Layer
- **pct_cvr_reg_fw** – The percent area of the parcel in decimal form that is covered by the regulatory floodway from the FEMA National Flood Hazard Layer

Contact:

- Organization: Rutgers NJAES Office of Research Analytics
- Website: <https://ora.rutgers.edu>
- Primary Contact Name: Lucas Marxen, Associate Director
- Primary Contact Email: lmarxen@njaes.rutgers.edu
- Primary Contact Phone: 848-932-4543